

The Bioinformatics Lab - practical course

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Monday 14:00-16:00 practical room MI 01.08.021

Round of introduction

Organisation – practical session

- 20 min: presentation about experiences in last programming challenge
 - one student, named at the end of the last session – volunteers wanted
 - 5 slides
 - his protocol will be published at the website
- 10 min: discussion / feedback about last programming challenge
- 30 min: discussion of new topic
 - one student leading the discussion, named at the beginning of the session – volunteers wanted
- 30 min: raising of critical issues in the new topic
 - one student leading the discussion, named at the beginning of the session – volunteers wanted
- 10 min: general discussion and outline of new programming challenge
- remaining: start working on programming challenge

Organisation – individual work

- Completely implement programming challenge
 - There should be a working and documented solution on the USB device
- Write a protocol when it's your turn
 - 2-4 pages
 - One for every session will be published at the website
- Prepare for the next topic
 - Useful links are provided on website

Requirements to pass

- Pass 3 tests
- One presentation of experiences + one published protocol
- One discussion leader for new topic
- One critical discussion leader for new topic
- A Debian package with your favourite bioinformatics tool (last two sessions)

Objective

- Learn to -
 - Build an average bioinformatics lab
 - Work in a bioinformatics lab
 - through the example of the Rost Lab
- Get familiar with available open source software solutions
- Master these software solutions
- Work more efficiently knowing what's in the background and what you can (re)use

Topics

- **External media / installing a Linux OS / Booting Linux / Debian stable**
- Shell scripts, command line (terminal) editors and compilation
- Virtualization
- Cloud services (Amazon Web Services)
- User management / directory services
- Mail, DNS
- Web server
- Databases and SQL
- Basic web services - CMS and Wiki
- Computer Clusters and External Services : Excursion LRZ
- Modules in programming, development and design